

Book Reviews

Machine Intelligence. Vol. 7. Edited by BERNARD MELTZER and DONALD MICHIE, Wiley, New York, 1972.

In the fall of 1973, I was presented with the latest in a series of volumes on machine intelligence edited by Bernard Meltzer and Donald Michie at Edinburgh University (*Machine Intelligence 7*, Wiley, New York, 1972). At this time I was teaching an M.I.T. seminar entitled "Automating Knowledge Based Programming and Validation using Actors." The members of the seminar agreed that it would be interesting and useful to produce a critical review of some of the more prominent papers in the volume. I collected together the best of the critiques into the following review. Although I do not agree with all of the opinions expressed in these critiques, I believe that they are all professionally and intellectually respectable.

"Utterances as Programs"

D. J. M. DAVIES AND S. D. ISARD

Davies and Isard's paper discusses the loose analogy between human understanding of natural language and computer "understanding" of programming languages. Most of the paper applies the distinction between "compilation" and "execution" to selected examples of natural language use.

The basic analogy hinges on the distinction between understanding an utterance and actually carrying it out. Further the point is made that these phases are intermixed. The hearer of an utterance may be "executing" part of it (such as resolving noun-group referents) while still "compiling" (parsing) the rest.

The authors use of this compile/execute distinction is not entirely clear, because while they consider all knowledge to be represented by procedures (as in PLANNER), they fail to distinguish among the various ways a given piece of knowledge may be used (executed). Indeed, one might well consider noun-reference resolution as a further phase of compilation, rather than as execution.